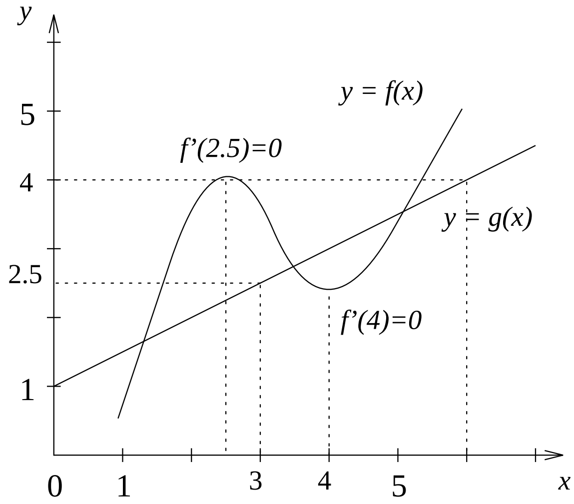
Math 126B **Calculus With Analytic Geometry III** **Spring 1995**

QUIZ #1 SOLUTIONS

3/30/95

1. Since $h'(x) = f'(g(x))g'(x)$ by the chain rule, and $g'(x)$ is never zero, the only way to get $h'(x) = 0$ is if $f'(g(x)) = 0$. From the graph, $f'(2.5) = f'(4) = 0$, so we need to find x such that $g(x) = 2.5$ or $g(x) = 4$. We can read these off the graph; the answers are $x = 3$ and $x = 6$.



2. From the drawing below, we need to choose a and b such that

$$1.5 = |a\vec{v}| = 3.4|a|,$$
$$2.2 = |b\vec{x}| = 4.7|b|.$$

Because $b\vec{x}$ has to point in the direction opposite to $\vec{x}$, b must be negative; on the other hand, a is positive. Thus $a = 1.5/3.4 \approx .44$ and $b = -2.2/4.7 \approx -.47$.